

Abstract

A liquid crystal device capable of giving a phase distribution to transmitted light without the need for complicated calculations, thereby making it possible to easily perform manufacturing of liquid crystal devices and device evaluations thereof. A liquid crystal layer (120) sealed between glass substrates (100) and (110) has a given thickness distribution owing to the unevenness of a sub-substrate (111) provided inwardly of the glass substrate (110). Electrodes (130) and (140) disposed on the opposite sides of this liquid crystal layer (120) have planar shapes and are disposed in parallel. Accordingly, the distance between the two electrodes (130) and (140) is constantly uniform, and an electric field distribution applied to the liquid crystal layer (120) is uniform. Accordingly, the shape of a phase distribution to be given to the transmitted light through the liquid crystal is determined by only the thickness distribution of the liquid crystal layer, and the magnitude is determined by an applied voltage value to be applied to the electrodes. Accordingly, by uniformizing the electric field distribution applied to the liquid crystal layer, it is possible to easily and accurately calculate the phase distribution of the transmitted light, by using the thickness distribution of the liquid crystal layer.